From these I derive the following differences of right ascension between (a) and (b) and the Sun :—

From	$(a) - \odot$ Δa m s	$(b) - \odot$ Δa m s
S_1 =	-8 31·6	-26 32·6
S_2 =	-8 37·6	-26 38·2
S_3 =	-8 25·6	-26 26·6
S_4 =	-8 31·5	-26 32·4

The differences of declination previously determined were respectively $-0°\ 22'$ and $-0°\ 35'$; and hence we have

Washington M.T.				Planet$-\odot$ Δa	$\Delta \delta$	Apparent a	δ
	h m s			m s	° '	h m s	° '
1878 July 29	5 16 37	(a)		-8 32	-0 22	8 27 24	$+18$ 16
29	5 17 46	(b)		-26 32	-0 35	8 9 24	$+18$ 3

The magnitude of (a) was 4 to $4\frac{1}{2}$; that of (b) about $3\frac{1}{2}$. They were probably really brighter because the illumination of the sky was not considered in the estimates.

Before I came to reduce the observations I thought that the star (b) might possibly have been ζ *Cancri*, because I did not see the latter also. The sweep was not extended beyond (b), and just as I had recorded its place, the Sun came out. The time available for the observations was so short that it was not possible to get more data than I have given above. I did see θ *Cancri* as well as (a), and the place of the latter is sure. I consider that of (b) to be also sure, and hence that it is a new star.

Ann Arbor, 1878, *Sept.* 3.

Note on Brightness.

By R. A. Proctor, Esq., Hon. Fellow, King's College, London.

I regret that I should have again misunderstood Mr. Stone. I thought he referred only to the light-gathering power of the 26-inch telescope : for he gave no reasons, and I should have expected reasons, for a proposition certainly not self-evident. He asked simply why the satellites of *Mars* can be seen with large telescopes, though invisible with small ones. I think it unlikely that the visibility of the satellites of *Mars* with large telescopes depends at all on the smaller size of the diffraction image. The quantity of light forming the image is the chief point to be considered (I observe that Prof. Newcomb, in estimating the size of

the satellites, considers this point only).   I believe it is the only point the eye can appreciate.*   In considering the separating powers of telescopes, the size of the diffraction image is of course an all-important point; but it can scarcely affect the space-penetrating power.

1878, *August* 29.

Note upon the Proper Motion of 5 Serpentis.
By Professor T. H. Safford.

The right ascension of this star as given in Bessel's Bradley is about $20'' = 1^s\cdot33$ too large.   By a new reduction of Bradley's three observations, I find for 1755·0, but without proper motion, using Newcomb's standard right ascensions,

			Mean R.A.		
			h	m	s
1751	Jan. 7	Old Style	15	6	49·56
	May· 26	,,			49·46
	June 3	,,			49·94
Mean (1751·3)			15	6	49·65
The *Fundamenta* gives			15	6	50·90

D'Agelet's one observation as reduced by Dr. Gould,

	h	m	s
1800·0 (1784·4)	15	9	5·7,

needs a correction of $+0^s\cdot74$.   The time-stars for this date, June 5, 1784, are *Capella* and *Rigel*, and passed but a few minutes after the Sun.   Nineteen small stars observed in the evening give corrections, when compared with their places from Bradley, brought up with Mädler's proper motion, of which one only is negative, and the mean of all is $+0^s\cdot737 \pm 0^s\cdot063$, showing that (probably) the instrument was exposed to the Sun's heat at noon and changed its position during the afternoon.

The correction is confirmed by five other stars, whose right ascensions were found in Bailey's Lalande.

With these corrections, and not without, the right ascensions can be made to agree well with a formula including position for

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* In the sense of distinguishing between the intensities of the impressions produced on the optic nerves by two diffraction images, unequal in size but both very small, and equal as regards quantity of light.